Remarks

The present Amendment is submitted in response to the final Office Action dated March 25, 2010.

The final Office Action rejects claims 1, 4, 8 and 9 under 35 USC §102(b) over Maeda, rejects claims 1, 5, 6 and 10 under §102(b) over Altfather, rejects claim 1 under 35 USC §103(a) over Wieser in view of Maeda and rejects claims 11 and 12 under §103(a) over Wieser and Maeda further in view of Tomooka.

In response to the rejections in view of Maeda and Altfather under section 102(b), and of Wieser in view of Maeda, and further in view of Tomooka, under section 103(a), applicant has amended independent claim 1, the sole independent claim, to incorporate the subject matter of claim 5, now cancelled, and to make clear that the invention as claimed is an intrusion detector for detecting a presence of liquid applied on a surface to render the intrusion detector inoperable.

Independent claim 1 as amended now calls out an intrusion detector including a sensor arrangement for detecting a liquid (C) applied on a surface (100, 120, 160, 170) to render the intrusion detector inoperable.

The sensor arrangement comprises at least one transparent elevation (12, 22, 32, 42, 52, 62, 72) formed on the surface (100, 120, 160, 170), wherein the transparent elevation (12, 22, 32, 42, 52, 62, 72) is made of a first transparent material (B), wherein at least one first facet (110, 111, 171, 172, 181) of the

transparent elevation (12, 22, 32, 42, 52, 62, 72) defines a first angle (α, β) with the surface (100, 120, 160, 170), and wherein the first angle (α, β) is larger than an angle at which a total reflection occurs at an interface of the first transparent material (B) and air (A) and is smaller than an angle at which a total reflection occurs at an interface of the first transparent material (B) and the liquid (C), and at least one second elevation (12, 22, 32, 42, 52, 62, 72; 79) having a second facet (179) formed adjacent to the first facet (110, 111, 171, 172, 181) of the transparent elevation (12, 22, 32, 42, 52, 62, 72), wherein the second facet (179) defines a second angle with the surface (100, 120, 160, 170), which second angle is larger than 75° in order to enhance capillarity effects of a liquid applied thereon.

A light source (13, 23, 33, 43, 53, 63, 73) is arranged for emitting an incident ray (r) into a first direction such that the incident ray (r) passes through the surface (100, 120, 160, 170) into one of the transparent elevation (12, 22, 32, 42, 52, 62, 72) and the second elevation (12, 22, 32, 42, 52, 62, 72; 79), such that in a presence of the liquid (C) at one of the first facet (110, 111, 171, 172) and the second facet (179), the incident ray is transmitted through the first facet (110, 111, 171, 172) or the second facet (179), wherein in an absence of the liquid (C), the incident ray is reflected due to a total reflection at the first facet (110, 111, 171, 172) or the second facet (179).

A light detector (14, 24, 34, 44, 54, 64, 74) is included for detecting the reflected incident ray (r') at one of the first facet and the second facet.

Maeda, as distinguished, discloses an inkjet tank detection level apparatus and method, and is not an intrusion detector, as claimed.

Maeda's Fig. 9 discloses an ink tank 700 including a triangular prism 180, with a concave-shaped bottom, for detecting a remainder ink in reservoir 716. Maeda measures and detects an intensity of the received light, and compares it with an intensity of the transmitted light, thereby determining whether ink is present in the reservoir.

Altfather, like Maeda, discloses an ink container ink level sensing system, and is not an intrusion detector. Altfather's Fig. 2 shows a printhead cartridge including first 40 and second 42 ink containers.

A light directing element 21 is integrally formed in a bottom wall 17a as a prism, and includes facet surfaces 21A, 21B, angled of the surface normal at 49°, which element extends into compartment 42. Element 21 is a truncated pyramidal shape.

A second light directing element 22 is formed as part of wall 17A as a prism, and includes two facet surfaces 22A, 22B, extending into compartment 42. Element 22 is a truncated pyramidal shape.

Altfather operates to detect a presence of a container 16 using second light directing element 22, and operates to detect low ink detection using first light directing element 21.

While Altfather may be said to include first and second adjacent elevations in elements 21, 22, Altfather's element 22 does not include the limitation of

having a second facet defining a second angle with the surface that is larger than 75° in order to enhance capillarity effects of a liquid applied thereon.

Hence, neither Maeda nor Altfather teach or suggest at least one second elevation having a second facet formed adjacent to the first facet of the transparent elevation or prism, wherein the second facet defines a second angle with the surface that is larger than 75° in order to enhance capillarity effects of a liquid applied thereon.

Accordingly, claim 1, and claims 4, 8 and 9 that depend from claim, are patentable over Maeda under §102(b), and claim 1, and claims 5, 6 and 10 that depend from claim 1, are patentable under §102(b) over Altfather.

In response to the rejection claim 1 over Wieser in view of Maeda, applicant agrees that Wieser discloses a passive infrared intrusion detector 1 including a light source (LED) 8 and sensor (photodiode) 9 for monitoring an entrance window 3 for sabotage.

However, because Wieser's Fig. 3 passive infrared intrusion detector 1 and sabotage monitoring arrangement are not configured so that at least one first facet of an elevation comprising a transparent material is defined at a first angle (α, β) with the surface that is larger than an angle at which a total reflection occurs at an interface of the transparent material and air and smaller than an angle at which a total reflection occurs at an interface of the transparent material and liquid, Wieser is not intended to operate as taught by Maeda.

That is, Wieser is not intended to operate such that an incident ray transmitted from a light source into the first facet passes through the first facet in the presence of the liquid, and is reflected due to a total reflection at the first facet in an absence of the liquid such that a light source can determine whether a liquid has been applied.

Hence, modifying Weiser by the teachings of Maeda as proposed in the final Office Action would render the Wieser unsatisfactory for its intended purpose (see In re Gordon, 221 USPQ 1125 (Fed. Cir. 1984)), and/or at least change Wieser's respective principles of operation (see In re Ratti, 123 USPQ 349 (CCPA 1959)), which in either case compels a legal conclusion that the proposed combinations cannot be obvious under the law; MPEP 2143.01.

Perhaps more importantly, however, and in view of the instant amendment to independent claim 1, Wieser suffers from the same shortcomings of Maeda.

That is, neither Wieser nor Maeda teach or suggest at least one second elevation having a second facet formed adjacent to the first facet of the transparent elevation or prism, wherein the second facet defines a second angle with the surface that is larger than 75° in order to enhance capillarity effects of a liquid applied thereon.

Hence, amended independent claim 1 is patentable under 35 USC §103(a) over Wieser in view of Maeda, and applicant respectfully request withdrawal of the rejection thereunder.

In response to the rejection of claims 11 and 12 under 35 USC §103(a) over Wieser in view of Maeda further in view of Tomooka, applicant respectfully asserts that Tomooka fails to overcome the shortcomings of Wieser combined with Maeda, as asserted above in response to the §103(a) rejection of claim 1 over Wieser in view of Maeda.

That is, none of Wieser, Maeda or Tomooka teaches or suggests at least one second elevation having a second facet formed adjacent to the first facet of the transparent elevation or prism, wherein the second facet defines a second angle with the surface that is larger than 75° in order to enhance capillarity effects of a liquid applied thereon.

Hence, it would not have been obvious to modify Wieser/Maeda with Tomooka, nor would modifying Wieser/Maeda with Tomooka as suggested realize an intrusion detector including all of the limitations of claims 1/11 and 1/12.

Applicant, therefore, respectfully requests withdrawal of the rejection of claims 11 and 12 under 35 USC §103(a) over Wieser in view of Maeda further in view of Tomooka.

Accordingly, the application as amended is believed to be in condition for allowance. Action to this end is courteously solicited. However, should the Examiner have any further comments or suggestions, the undersigned would very much welcome a telephone call in order to discuss appropriate claim language that will place the application in condition for allowance.

Respectfully submitted,

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